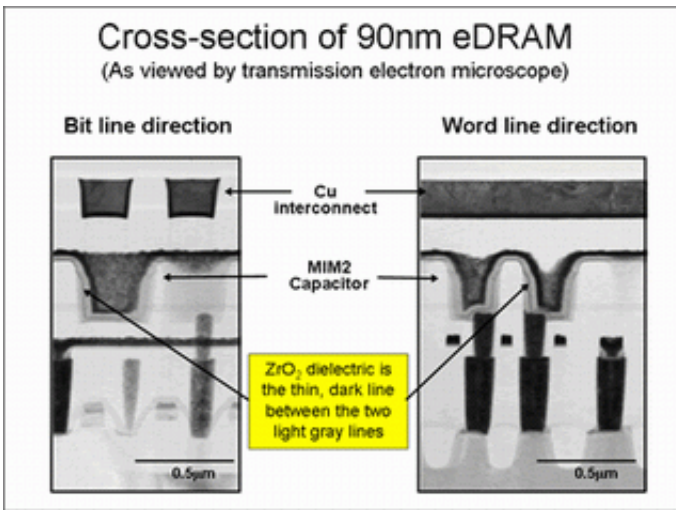


# NEC Unveils 90-Nanometer Embedded DRAM Technology

March 7 2005



## *New ZrO<sub>2</sub> Dielectric Material Increases Performance of CMOS-Compatible Embedded DRAM*

NEC Electronics Corporation today announced its new metal insulator metal (MIM) technology for 90 nanometer embedded DRAM (eDRAM), called MIM2. In addition, to meet the technical challenges presented by moving the company's established CMOS-compatible eDRAM technology to a 90 nm process, NEC Electronics, ahead of other vendors, has adopted the use of zirconium oxide (ZrO<sub>2</sub>), a new dielectric material with a higher-k factor that allows the embedded

DRAM's smaller bit cells to retain storage capacitance. With this new ZrO<sub>2</sub> technology, NEC Electronics, a leader and pioneer of CMOS-compatible eDRAM, is well positioned to move its eDRAM technology to even smaller process geometries as it evolves.

The new dielectric material and MIM2 technology enable NEC Electronics to deliver robust eDRAM solutions with smaller cell sizes and higher memory integration, ample storage capacitance and lower cell heights, all the while maintaining the merits of existing eDRAM technology, such as CMOS-compatibility, low power and high-speed random access to the eDRAM.

"We are proud that we have successfully completed 90 nm eDRAM qualification of our leading-edge MIM2 technology that offers our customers some truly compelling improvements in power consumption and performance, while enabling reduced die sizes," said Takaaki Kuwata, general manager, Advanced Device Development Division, NEC Electronics Corporation. "Following our great success in implementing ZrO<sub>2</sub> technology at the 90 nm node, we will apply this technology to our future 65 nm and 45 nm eDRAM offerings."

NEC Electronics' eDRAM technology provides a wide range of macro variants, ranging from the high performance to the low power consumption required by a variety of applications, including high-end networking devices and consumer electronics products such as cell phones, mobile handheld devices and gaming/entertainment devices. The full macro lineup for NEC Electronics' 90 nm ASIC series, CB-90, is scheduled to be ready by September 2005.

Citation: NEC Unveils 90-Nanometer Embedded DRAM Technology (2005, March 7) retrieved 23 May 2024 from <https://phys.org/news/2005-03-nec-unveils-nanometer-embedded-dram.html>

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